

Phase-Transfer Catalyzed Alkylation of Hydantoin and 5-Methyl-5-Phenylhydantoin

Tariq R. Sobahi^{*}, Mohamed A. Hassan,
Huissen A. Moustafa and Nahed O. Bawaked

*Department of Chemistry, Faculty of Science,
King Abdulaziz University,
P.O. Box 80203, Jeddah 21589, Saudi Arabia
^{*}drtariq_s@hotmail.com*

Abstract. PTC-alkylation of hydantoin (**1a**) and 5-methyl-5-phenylhydantoin (**1b**) by different organohalogen reagents at 25°C in the presence of tetrabutylammonium bromide as catalyst has been investigated either in the absence or presence of CS₂. This work is aiming to study the comparative reactivity of N- versus O- of hydantoins toward alkylation and cycloalkylation. In all cases N3 monoalkylation or N1 and N3 dialkylation are the main products. The structures of alkylhydantoins have been established by IR, NMR, mass spectral data and elemental analysis.

Keywords: Phase-transfer catalysis (PTC), alkylation, cycloalkylation, hydantoin, 5-methyl-5-phenylhydantoin, tetrabutylammonium bromide.